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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,046	08/23/2001	Igor Kharitoneko	CR1083AC	1649

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EXAMINER	
MISLEH, JUSTIN P	
ART UNIT	**PAPER NUMBER**
2612	

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/938,046	KHARITONEKO ET AL.	
	Examiner	Art Unit	
	Justin P Misleh	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1 - 13 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1, 5, and 6 - 9 is/are rejected.

7)☒ Claim(s) 2 - 4 and 10 - 13 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 23 August 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

2. The disclosure is objected to because of the following informalities: minor typographical errors.

On page 8, line 23, the disclose states, "The 3 and modules 4, 5 perform image corrections." The Examiner believes this is typographical error and should be changed to state, "The color correction circuit 3 and modules 4, 5 perform image corrections."

Appropriate correction is required.

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. **The form and legal phraseology often used in patent claims, such as "means," "comprising," and "said," should be avoided.** The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

Claim Objections

4. **Claims 1 – 4, 6, 7, 10, and 11** are objected to because of the following informalities: lack of clarity and precision.

5. **Claim 1** (Also equally applicable to **Claim 6**) first introduces therein, "an input channel multiplier having an input;" however, in subsequent references the language recites, "two further multipliers with inputs." For the sake of clarity and precision, the Examiner suggests the subsequent reference be changed to recite, "two further input channel multipliers having inputs."

Also, Claim 1 first introduces, in an open-ended manner, "at least three color input channel processing circuits," however, in a subsequent reference the language recites, "forming part of the other color input channel processing circuits." The subsequent reference lacks clarity and precision because it may indicate a finite number of color input channel processing circuits, when as previously introduced, requires a only a minimum number of circuits. For the sake of clarity and precision, the Examiner suggests the subsequent reference be changed to recite, "forming part of other color input channel processing circuits."

Finally, Claim 1 first introduces "an adder with ... an uncorrected color channel input." Furthermore, Claim 1 recites, "an output of said input channel multiplier being coupled to an input of said adder." It is important to note that the claim language is written broadly enough such that "an input of said adder" may or may not be the "uncorrected color channel input." However, in the last lines of the claim, the language recites, "said two further multiplier having outputs coupled to inputs of said adder." Since, the claim language is written broadly enough, as described, simply stating "coupled to inputs" lacks clarity and precision because the language

does not specify whether the outputs are "coupled to said input," coupled to said uncorrected color channel input," or "coupled to another inputs."

6. **Claim 2** recites therein, "wherein said multipliers for a color channel have coefficients;" however, as noted above, "input channel multipliers" have been previously introduced. Furthermore, "for a color channel" is unnecessary claim language that leads to a lack of clarity and precision because as required by Claim 1, each of the color input channel processing circuits comprise the following components: an adder, a noise reduction filter, an input channel multiplier, and at least two further input channel multipliers. For the sake of clarity and precision, Claim 2, should recite, "A color correction circuit as claimed in claim 1, wherein said input channel multipliers have coefficients that when summed together are less than 0.2." **Claim 10** presents a similar issue.

7. **Claim 3**, recites therein, "wherein said coefficients for a color channel when summed together," however, "coefficients" have not been previously introduced. Furthermore, "for a color channel" is unnecessary claim language that leads to a lack of clarity and precision because as required by Claim 1, each of the color input channel processing circuits comprise the following components: an adder, a noise reduction filter, an input channel multiplier, and at least two further input channel multipliers. For the sake of clarity and precision, Claim 3, should recite, "A color correction circuit as claimed in claim 1, wherein said input channel multipliers have coefficients that when summed together are substantially zero." **Claim 11** presents a similar issue.

8. **Claim 4**, recites therein, "wherein all said coefficients for a color channel when summed together," however, "all coefficients" have not been previously introduced. For the sake of

clarity and precision, Claim 4, should recite, "A color correction circuit as claimed in claim 1, wherein said input channel multipliers for each of said color input channel processing circuits have coefficients that when summed together are less than 1."

9. **Claim 7** recites therein, "wherein there is comprise a color interpolation module," is believed to a typographical error that leads to a lack of clarity and precision. The Examiner suggests deleting "comprise."

Appropriate correction is required. The Applicant is asked to thoroughly review all the claim language to avoid subsequent errors.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. **Claims 1 and 6** are rejected under 35 U.S.C. 102(b) as being anticipated by Applicant's Conceded Prior Art (ACPA).

As stated in the MPEP § 2111.02 (please see also Kropa v. Robie, 187 F.2d 150, 152, 88 USPQ 478, 481 – CCPA 1951), if the preamble of the claim neither recites the limitations of the claim nor is necessary to give life, meaning, and vitality to the claim; then the preamble of the claim is not served to further define the structure of the claim. Thus, in regards to Claim 6, the preamble of the claim is not given any patentable weight since the preamble of the claim neither

recites the limitations of the claim nor is necessary to give life, meaning, and vitality to the claim.

More specifically, "a camera" is recited in the preamble and is not necessary to give life, meaning, and vitality to the claim.

12. For **Claims 1 and 6** (please see objections above), ACPA discloses, as shown in figure 1 and as stated on page 6 (line 21) – page 8 (line 11), a color correction circuit having at least three color input channel processing circuits (R Color Channel, G Color Channel, and B Color Channel), each of said color input channel processing circuits comprising:

an adder (1) with a corrected color channel output (R_C) and an uncorrected color channel input ;

- The uncorrected color channel input to the adder 1 corresponds to all signals that are not output from the adder 1, including output of multipliers 1, 2, and 3, because the adder 1 outputs a corrected color channel. In other words, based upon the Examiner's interpretation, the adder 1 performs the correction.

a noise reduction filter having a filter input coupled to said uncorrected color channel input ;

- Although it is not shown in figure 1, this feature is inherent because no image sensor would naturally yield a color signal. In other words, the light intensity captured by the image sensor must have been filtered to yield red light intensity. It is important note that since the claim language does not specify what is being filtered in the noise reduction filter, calling the filter a noise reduction filter is

just a label and is anticipated by any filter including a red light filter, as described above.

an input channel multiplier (MUL 1) having an input coupled to an output of said noise reduction filter (The red filtered light R is directly input into MUL 1), an output of said input channel multiplier (MUL 1) being coupled to an input of said adder (As clearly shown, the output of MUL 1 is directly input to adder 1); and

at least two further input channel multiplier circuits (MUL 2 and MUL 3) with inputs respectively coupled to outputs of other noise reduction filters (The green filtered light G is directly input into MUL 3 and the blue filtered light B is directly input into MUL 2) forming part of other color input channel processing circuits (The G and B color channels correspond to two other color channel processing circuits), said two further input channel multiplier circuits (MUL 2 and MUL 3) having outputs coupled to inputs of said adder (As clearly shown, the output of MUL 2 and MUL 3 is directly input to adder 1).

13. As for **Claim 7** (please see objection above), ACPA discloses, as stated on page 9 (lines 3 – 5), that a color interpolation module is included; however, the details omitted because it is regarded by the Applicant as well known in the art.

14. As for **Claim 8**, ACPA discloses, as stated on page 9 (lines 3 – 5), that a gamma module is included; however, the details omitted because it is regarded by the Applicant as well known in the art.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Conceded Prior Art (ACPA) in view of Nishiwaki et al.

17. As for **Claim 5**, ACPA disclose, as stated above, a noise reduction filter that although it is not shown in figure 1, is an inherent feature because no image sensor would naturally yield a color signal. In other words, the light intensity captured by the image sensor must have filtered to yield red light intensity. However, Claim 5 is further limiting in that the noise reduction filter is a low pass filter wherein the ACPA does not that the red filtered light R also passes through a low pass filter.

On the other hand, Nishiwaki et al. also disclose a color correction circuit including at least color correction channels. More specifically, Nishiwaki et al. teach, as shown in figure 3 and as stated in column 3 (lines 16 – 33), wherein each color channel (R, G, B) is provided individually with a low-pass filter, wherein the output of the individual low-pass filters are input into a matrix circuit.

As stated in column 1 (lines 60 – 65), at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have included individual low-pass filters for the color channels, as taught by Nishiwaki et al., in the color correction circuit, disclosed by ACPA, for the advantage of preventing a deterioration in image resolution.

18. **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. in view of Nishiwaki et al.

19. For **Claim 9**, Nakamura et al. disclose, as shown in figure 4, a method of correcting a digital color sampled signal comprising at least three color channels (51R; 51G, 51B), the channels being a Red Channel, Green Channel and Blue channel, the method comprising the steps of:

providing uncorrected color sampled signals (51R, 51G, and 51B are regarded by the Examiner as uncorrected color sampled signals;

multiplying said uncorrected color sampled signals (51R, 51G, 51B) with selected coefficients (56R, 56G, 56B) to provide noise reduced signal samples of said uncorrected color sampled signals (R', G', B'); and

adding (60R, 60G, 60B) each of said uncorrected color sampled signals (via the Y matrix circuit 52 and High Luminance Compression Circuit 54) to selected said noise reduced signal samples (R', G', B') to provide a corrected color sampled signal (61R, 61G, 61B).

Because the multiplying step provides noise reduced signals samples and because uncorrected color sampled signals are provided to the multiplier circuits, the diversion of the uncorrected color samples through the Y matrix circuit and the High Luminance Compression circuit and away from the multipliers indicates that the uncorrected color sampled signals in whatever form they may be including Y' are added to the noise reduced signal samples in the adders (60R, 60G, and 60B). However, Nakamura et al. does not disclose filtering uncorrected color sampled signals on each of said color channels to provide filtered channel sampled signals.

On the other hand, Nishiwaki et al. also disclose a color correction circuit including at least color correction channels. More specifically, Nishiwaki et al. teach, as shown in figure 3 and as stated in column 3 (lines 16 – 33), wherein each color channel (R, G, B) is provided individually with a low-pass filter, wherein the output of the individual low-pass filters are input into a matrix circuit.

As stated in column 1 (lines 60 – 65), at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have included individual low-pass filters for the color channels, as taught by Nishiwaki et al., in the color correction method, disclosed by Nakamura et al., for the advantage of preventing a deterioration in image resolution.

Allowable Subject Matter

20. **Claims 2 – 4 and 10 – 13** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Cited Prior Art

21. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

- Tsuji and Kaji et al. each disclose image processing circuits for coloring color channels on an individual color channel basis. Each of the image processing circuits includes multiplying individual color channels by selected coefficients prior to a summation of the corrected color channels. Various filtering is also included.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Justin P Misleh whose telephone number is 703.305.8090 (571.272.7313 ~ March 2005). The Examiner can normally be reached on Monday through Thursday from 7:30 AM to 5:00 PM and on alternating Fridays from 8:00 AM to 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Wendy R Garber can be reached on 703.305.4929. The fax phone number for the organization where this application or proceeding is assigned is 703.872.9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM
February 5, 2005

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